REMARKS

Claims 2, 15, 47, 52-57, 59, and 72-79 have been cancelled; therefore, Claims 1, 3-14, 16-46, 48-51, 58, and 60-71 are currently pending in application Serial No. 09/679,119.

An issue of public use or on sale activity has been raised in this application. In order for the Examiner properly consider patentability of the claimed invention under 35 USC 102(b), additional information regarding the issue is required as follows: any additional disclosures Roger Hoffman made about the subject matter contained in the cited reference, and any public use of the conceptual matter.

Applicant states that there was no public use or on sale activity relating to the patent application and claims thereof prior to the filing of the application.

Claims 1, 3-14, 16-46, 48-51, 58 and 60-71 are rejected under 35 USC 102(b) as being anticipated by Hoffman (Hoffman, Roger, "Small tonnage increases examined by medium mill for cost-effectiveness." Pulp & Paper, September 1980).

As per independent Claims 1, 17, 21, 30, 33, 49, 60, 61, the inventor (Roger Hoffman), disclosed the business method to include: controlling the operating speed of a *continuous process* manufacturing facility (Incremental efficiency concept deals with the efficiency associated with incremental changes in machine speed) comprising the steps of: determining a current operating speed of said *continuous process* manufacturing facility (current efficiency - machine speed is a factor of efficiency); determining a desired operating speed (optimal efficiency), the desired operating speed dependent on at least one economic variable that varies depending on the operating

speed (Energy Costs - see Fig. 3); comparing said current operating speed to said desired operating speed (Fig. 3, comparing efficiencies); adjusting said current operating speed in response to said determination (operator would choose efficiency which produces best production with lowest cost - see Fig. 3).

Amended Claim 1 requires that the speed be adjusted by directly controlling the machine drive and that the operating speed be adjusted either positively or negatively. The prior art article cited by the Examiner relates to high energy requirements as stated in the abstract and further relates to minimizing energy consumed per ton of product produced. Page 1, column 1, further discusses the "energy hogs" examples being steam showers, ventilation system and vacuum pumps. The energy intensive nature of this "add on" equipment becomes increasingly apparent as production rates rise. Column 2 of page 1 describes the Green Bay Packaging Mill as having two steam showers. It further discusses the amount of energy required to operate these steam showers. Column 2 further discusses similar situations with the ventilation system and the wet end vacuum system.

Column 2 further states that the energy required to produce a given tonnage from a given machine is inversely related to machine efficiency. The article states that Fig. 3 shows that the slower machine can be run for a given production rate, the lower the energy cost will be.

The article gives an example of changing a paper machine system, by use of steam showers and more vacuum which would result in an increase in machine speed of 5% and that would lower machine efficiency from 95 to 93%, the incremental

efficiency can be visualized as the combined efficiency of separate machines. On page 2, Column 1, it states that by utilizing the steam showers resulted in a 5% increase in machine speed. The additional steam required takes into account the fact that the steam shows operate during non-productive periods, when there is a break. Fig. 3 which is cited by the Examiner as teaching the claims only shows energy versus average production at different efficiencies.

The prior art article does not teach adjusting directly by control of the machine drive, the current operating speed. What the article suggests is the use or non-use of a steam shower. Further, the article only teaches adjusting the speed in a negative way and not in a positive way. Further, the prior art article does not determine a current operating speed, nor does it determine a desired operating speed, nor is there a comparison between the current operating speed and the desired operating speed. For all of these reasons, Claim 1 is not anticipated or obvious over the prior art.

Regarding Claim 17, the prior art article does not teach obtaining the current economic efficiency of a facility. Further, there is no input of information on business transactions that effect the economic variables. The article does not teach computing the economic of the facility with a proposed transaction leaving the remaining variables constant. Further, there is nothing in the article which teaches displaying this information to an end user. Fig. 3 as cited by the Examiner only shows a graph of energy versus average production it does not teach the steps required in Claim 17. Therefore, Claim 17 is not anticipated or obvious over the prior art.

With regards to Claim 21, the prior art article does not teach a means for determining a current operating speed, the desired operating speed, and a means for comparing the current operating speed to the desired operating speed. Further, since the article at best only teaches the use and non-use of additional parts such as steam showers or vacuum, it cannot and does not teach adjusting directly by control of the steam drive, the current speed, positive or negative in response to the comparison. Therefore, Claim 21 is not anticipated or obvious over the prior art.

Regarding Claim 30, the prior art does not teach means for obtaining the current economic efficiency of a facility. It further does not teach means for inputting information on the business transactions that effect economic variables and means for computing the economic efficiency of the facility with the proposed transaction leaving the remaining variables constant. Lastly, the prior art article does not teach a means for displaying this information to an end user. Fig. 3 does not show any means whatsoever but shows a graph comparing energy versus average production, there are no computations in this for computing economic efficiencies of a facility. Therefore, Claim 30 is not anticipated or obvious over the prior art.

Claim 33 requires a computer readable program code for receiving as an economic input at least one economic variable that varies depending on operating speed. It further requires a computer readable program code means for determining a desired speed. The computer readable code further must output at optimal speed and this optimal speed must be inputted into the manufacturing facility in conjunction with a computer system. The prior art article first of all does not teach a computer readable

program code means. Further, the prior art article does not determine the desired speeds and optimal speeds nor does it teach inputting the optimal speed into the facility with a computer system. Therefore, Claim 33 is not anticipated or obvious over the prior art.

Claim 49 requires a computer readable program code means for obtaining current economic efficiency of a facility, inputting information on business transactions that effect economic variables and computing the economic efficiency of the facility with the proposed transaction leaving the remaining variables constant. This information is then displayed to an end user. The prior art article does not discuss computer readable program code means. The prior art article does not relate to proposed transactions and it further does not display any of this information to an end user. The prior art article referenced by the Examiner only shows a graph showing energy versus average production. Therefore, Claim 49 is not anticipated or obvious over the prior art.

Claim 60 requires determining a desired operating speed, determining a current operating speed and adjusting directly with a control of machine drive the operating speed positive or negative based on the desired operating speed. The prior art article does not discuss a desired operating speed or a current operating speed. Further, the prior art article does not adjust directly the control of a machine drive, the operating speed positive or negative. If anything is taught by the prior art article, it is the use or non use of equipment such as steam showers. Therefore, Claim 60 is not anticipated or obvious over the prior art.

Regarding Claim 61, the claim requires means for determining a current operating speed and a desired operating speed and means for comparing the operating speed. The claim further requires adjusting directly by the control of the machine drive the current speed positive or negative. The prior art article does not teach any of these features. Therefore, Claim 61 is not anticipated or obvious over the prior art.

As per Claims 3 and 35, Hoffman discloses determining said at least one economic variable is at least one of: a cost of manufacturing, at least one manufacturing inflow, and at least one manufacturing outflow (Fig. 3, Energy Cost/ton of production is equivalent to cost of manufacturing and Average Production is a function of manufacturing inflow and manufacturing outflow, such data is needed to plot the displayed graph).

For the reasons stated above for Claim 1, Claim 3 is not anticipated or obvious over the prior art.

Claim 35 requires a computer readable program code means for determining a desired operating speed. The prior art does not determine a desired operating speed. For these reasons and the reasons stated above for Claim 33, Claim 35 is not anticipated or obvious over the prior art.

As per Claims 4, 22, and 36, Hoffman discloses calculating the cost of manufacturing, the manufacturing inflow, and the manufacturing outflow at a plurality of potential speeds, and selecting the desired operating speed from the potential operating speeds (see rejection for Claim 3; Fig. 3, points on the graph).

Claim 4 requires calculating the cost based on a plurality of operating speeds and selecting the desired operating speed from the potential operating speed. The prior art article does not describe determining a plurality of potential operating speeds, it only discusses using the steam showers or not using the steam showers. Further, the prior art does not describe selecting the desired operating speed from the potential operating speed. For this reason and the reason stated above for Claim 1, Claim 4 is not anticipated or obvious over the prior art.

Claim 22 requires a means for determining a desired operating speed. The prior art article does not teach a means for determining a desired operating speed nor does figure 3 of the prior art article show any desired operating speeds. For this reason and the reason stated above for Claim 21, Claim 22 is not anticipated or obvious over the prior art.

Claim 36 requires a means for determining a desired operating speed which includes a computer readable program code means. Claim 36 further requires that this be done at a plurality of potential operating speeds and that the desired operating speed is selected from the potential operating speeds. The prior art article does not teach a means for determining a desired operating speed, nor does it teach determining a plurality of potential operating speeds. For this reason and the reasons stated above for Claim 33, Claim 36 is not anticipated or obvious over the prior art.

As per Claims 5, 24 and 37, Hoffman discloses calculating a marginal cost of manufacturing, a marginal manufacturing inflow, and a marginal manufacturing outflow at a plurality of marginal potential operating speeds and selecting the desired speed

from the marginal potential operating speeds and a prior desired operating speed (Fig. 3, Marginal cost is expressed as a function of total cost and quantity - as graphed).

Claim 5 requires determining a plurality of marginal potential operating speeds and selecting a desired operating speed from the marginal potential operating speed and prior desired operating speed. The prior art article does not teach calculating a marginal potential operating speeds, a desired operating speed and a prior desired operating speed. For this reason and the reason stated above for Claim 1, Claim 5 is not anticipated or obvious over the prior art.

Claim 24 requires determining a plurality of marginal potential operating speeds and selecting a desired operating speed from the marginal potential operating speed and prior desired operating speed. The prior art article does not teach calculating a marginal potential operating speeds, a desired operating speed and a prior desired operating speed. For this reason and the reason stated above for Claim 21, Claim 24 is not anticipated or obvious over the prior art.

Claim 37 requires determining a plurality of marginal potential operating speeds and selecting a desired operating speed from the marginal potential operating speed and achieving optimal operating speeds. The prior art article does not teach calculating a marginal potential operating speeds, a desired operating speed and achieving optimal operating speeds. For this reason and the reason stated above for Claim 33, Claim 37 is not anticipated or obvious over the prior art.

As per Claims 6, 25, and 38, Hoffman discloses wherein the economic variable is cost of manufacturing, and the cost of manufacturing includes ascertaining the correlation between operating speed and the cost of manufacturing (Fig. 3 - see curve).

Claim 6 requires ascertaining the correlation between operating speed and the cost of manufacturing. Nowhere in the prior art does it teach correlating operating speed and the cost of manufacturing. The only correlation is between energy and average production. For these reasons and the reasons stated above for Claim 1, Claim 6 is not anticipated or obvious over the prior art.

Claim 25 requires ascertaining the correlation between operating speed and the cost of manufacturing. Nowhere in the prior art does it teach correlating operating speed and the cost of manufacturing. The only correlation is between energy and average production. For these reasons and the reasons stated above for Claim 21, Claim 25 is not anticipated or obvious over the prior art.

Claim 38 requires ascertaining the correlation between operating speed and the cost of manufacturing. Nowhere in the prior art does it teach correlating operating speed and the cost of manufacturing. The only correlation is between energy and average production. For these reasons and the reasons stated above for Claim 33, Claim 38 is not anticipated or obvious over the prior art.

As per Claims 7, 26, and 39, Hoffman discloses determining said cost of manufacturing by ascertaining a correlation between operating sped and at least one of the following:

the per-unit cost of *manufacturing inflows* (per ton) and the usage of manufacturing inflows (Fig. 3, see curve).

Claim 7 requires ascertaining a correlation between operating speed and either the per unit cost of manufacturing inflows and the usage of manufacturing inflows. Such correlation is not shown in Fig. 3 of the prior art article. For this reason and the reasons stated above for Claim 1, Claim 7 is not anticipated or obvious over the prior art.

Claim 26 requires ascertaining a correlation between operating speed and either the per unit cost of manufacturing inflows and the usage of manufacturing inflows. Such correlation is not shown in Fig. 3 of the prior art article. For this reason and the reasons stated above for Claim 21, Claim 26 is not anticipated or obvious over the prior art.

Claim 39 requires ascertaining a correlation between operating speed and either the per unit cost of manufacturing inflows and the usage of manufacturing inflows. Such correlation is not shown in Fig. 3 of the prior art article. For this reason and the reasons stated above for Claim 33, Claim 39 is not anticipated or obvious over the prior art.

As per Claims 8 and 40, Hoffman discloses wherein the correlation between manufacturing cost and operating speed is ascertained by estimating the correlation

between manufacturing costs and operating speed of specific equipment or process in a *continuous process* manufacturing facility (Fig. 3, graph based on paper production facility data).

Claim 8 requires determining the operating speed of specific equipment or a process in the manufacturing facility. This is not taught in the prior art article. For these reasons and the reasons stated above for Claim 1, Claim 8 is not anticipated or obvious over the prior art.

Claim 40 requires determining the operating speed of specific equipment or a process in the manufacturing facility. This is not taught in the prior art article. For these reasons and the reasons stated above for Claim 33, Claim 40 is not anticipated or obvious over the prior art.

As per Claims 9, 10, 41, and 42, Hoffman discloses wherein the correlation between manufacturing cost and operating speed for a machine is determined by including usage of manufacturing inflows associated with breaks; and wherein the correlation between manufacturing cost and operating speed for a machine is determined by including usage of manufacturing inflows associated with breaks (Fig. 3 and Fig. 4, different graph lines indicate machine changes).

Claim 9 requires that the correlation further include manufacturing inflows during one or more breaks and production that produces product of unacceptable quality. Although Claims 3 and 4 describe machine efficiency, this is based on energy which is used during breaks. It does not correlate things included regarding unacceptable quality, nor there is a correlation between the manufacturing costs and operating speed

with includes breaks. For this reason and the reasons stated above for Claim 1, Claim 9 is not anticipated or obvious over the prior art.

For the reasons stated above for Claim 7, Claim 10 is not anticipated or obvious over the prior art.

Claim 41 requires that the correlation further include manufacturing inflows during one or more breaks and production that produces product of unacceptable quality. Although Claims 3 and 4 describe machine efficiency, this is based on energy which is used during breaks. It does not correlate things included regarding unacceptable quality, nor there is a correlation between the manufacturing costs and operating speed with includes breaks. For this reason and the reasons stated above for Claim 33, Claim 41 is not anticipated or obvious over the prior art.

For the reasons stated above for Claim 37, Claim 42 is not anticipated or obvious over the prior art.

As per Claims 11 and 43, Hoffman discloses wherein the correlation between manufacturing cost and operating speed is ascertained by establishing the correlation between manufacturing costs and operating speed of groups of at least one of equipment and processes in a manufacturing facility (Fig. 4, data based on cost of operating and production of a paper machine system).

Claim 11 requires establishing a correlation between manufacturing cost and operating speed of groups of at least one of equipment and processes. The prior art article does not teach a correlation with regards to operating speed. For this reason

and the reason stated above for Claim 1, Claim 11 is not anticipated or obvious over the prior art.

Claim 43 requires establishing a correlation between manufacturing cost and operating speed of groups of at least one of equipment and processes. The prior art article does not teach a correlation with regards to operating speed. For this reason and the reason stated above for Claim 33, Claim 43 is not anticipated or obvious over the prior art.

As per Claims 12 and 44, Hoffman discloses wherein the purchase price of manufacturing inflows is assigned, from lowest to highest per-unit cost, to increasing levels of *continuous process* manufacturing facility's production (purpose of Fig. 1, graph).

Claim 12 requires that the purchase price of manufacturing inflows is assigned from lowest to highest per unit cost. The Examiner points to Fig. 1 which shows a graph of profitability versus production rate. It does not assign a lowest to highest per unit cost to the purchase price of manufacturing inflows. For this reason and the reason stated above for Claim 1, Claim 12 is not anticipated or obvious over the prior art.

Claim 44 requires that the purchase price of manufacturing inflows is assigned from lowest to highest per unit cost. The Examiner points to Fig. 1 which shows a graph of profitability versus production rate. It does not assign a lowest to highest per unit cost to the purchase price of manufacturing inflows. For this reason and the

reason stated above for Claim 44, Claim 12 is not anticipated or obvious over the prior art.

As per Claims 13, 27, and 45, Hoffman discloses determining said manufacturing outflow by ascertaining a correlation between operating speed and sales of at least one of finished products and byproducts (Purpose of Fig. 1, graph).

Claim 13 requires determining manufacturing outflow by ascertaining a correlation between operating speed and sales of at least one of finished products and byproducts. Fig. 1 shows a graph related to profitability vs. production rate. Nowhere in the prior art article is there a teaching regarding sales of finished products and by-products. Further, there is no teaching regarding a correlation between operating speed and finished products and byproducts. For this reason and the reasons stated above for Claim 1, Claim 13 is not anticipated or obvious.

Claim 27 requires determining manufacturing outflow by ascertaining a correlation between operating speed and sales of at least one of finished products and byproducts. Fig. 1 shows a graph related to profitability vs. production rate. Nowhere in the prior art article is there a teaching regarding sales of finished products and by-products. Further, there is no teaching regarding a correlation between operating speed and finished products and byproducts. For this reason and the reasons stated above for Claim 21, Claim 27 is not anticipated or obvious.

Claim 45 requires determining manufacturing outflow by ascertaining a correlation between operating speed and sales of at least one of finished products and byproducts. Fig. 1 shows a graph related to profitability vs. production rate. Nowhere

in the prior art article is there a teaching regarding sales of finished products and by-products. Further, there is no teaching regarding a correlation between operating speed and finished products and byproducts. For this reason and the reasons stated above for Claim 45, Claim 33 is not anticipated or obvious.

As per Claims 14, 28, and 46, Hoffman discloses wherein the correlation between the operating speed and sales is ascertained by assigning a plurality of manufacturing outflows to at least one specific portion of the *continuous process* manufacturing facility's production (purpose of Fig. 1, graph).

Claim 14 requires a correlation between operating speed and sales. No such correlation or teaching is shown regarding these two variables. For this reason and the reasons stated above for Claim 1, Claim 14 is not anticipated or obvious over the prior art.

Claim 28 requires assigning different economic values of manufacturing outflow with specific portions of the manufacturing facilities production. The prior art does not teach assigning these values nor does it teach anything regarding the manufacturing facilities production. For these reasons and the reasons stated above for Claim 21, Claim 28 is not anticipated or obvious over the prior art.

Claim 46 requires assigning different economic values of manufacturing outflow with specific portions of the manufacturing facilities production. The prior art does not teach assigning these values nor does it teach anything regarding the manufacturing facilities production. For these reasons and the reasons stated above for Claim 33, Claim 46 is not anticipated or obvious over the prior art.

As per Claims 16, 29, and 48, Hoffman discloses wherein the manufacturing outflow is determined, from highest to lowest per-unit economic value, for increasing levels of the *continuous process* manufacturing facility's production (purpose of Fig. 1, graph; inflow and outflow are a component of production).

Claim 16 requires that the manufacturing outflow be determined from highest to lowest per unit economic value. There is no such determination shown or taught by the prior art article, no such determination in shown in Fig. 1. For this reason and the reasons stated above for Claim 1, Claim 16 is not anticipated or obvious over the prior art.

Claim 29 requires that the manufacturing outflow be determined from highest to lowest per unit economic value. There is no such determination shown or taught by the prior art article, no such determination in shown in Fig. 1. For this reason and the reasons stated above for Claim 21, Claim 29 is not anticipated or obvious over the prior art.

Claim 48 requires that the manufacturing outflow be determined from highest to lowest per unit economic value. There is no such determination shown or taught by the prior art article, no such determination in shown in Fig. 1. For this reason and the reasons stated above for Claim 33, Claim 48 is not anticipated or obvious over the prior art.

As per Claims 18, 31 and 50, Hoffman discloses wherein the operating speed of the *continuous process* manufacturing facility is dependent on at least one economic

variable, varies depending on the operating speed (Fig. 3, best machine efficiency, determinate of energy costs v. production).

For the reasons stated above for Claim 17, Claim 18 is not anticipated or obvious over the prior art.

For the reasons stated above for Claim 30, Claim 31 is not anticipated or obvious over the prior art.

For the reasons stated above for Claim 49, Claim 50 is not anticipated or obvious over the prior art.

As per Claims 19, 32, and 51, Hoffman discloses wherein the transactions include at least one of purchase of inflows, sales out outflows, capital additions, capital subtractions, and changes to equipment (Fig. 1, net income).

For the reasons stated above for Claim 17, Claim 19 is not anticipated or obvious over the prior art.

For the reasons stated above for Claim 30, Claim 32 is not anticipated or obvious over the prior art.

For the reasons stated above for Claim 49, Claim 51 is not anticipated or obvious over the prior art.

As per Claim 20, Hoffman discloses wherein the business transactions are proposed business transactions. (Fig. 1, net income).

Claim 20 requires that the business transactions are proposed business transactions. The article relates to actual use of additional steam and does not discuss

any proposed transactions. For these reasons and the reasons stated above for Claim 17, Claim 20 is not anticipated or obvious.

As per Claim 23, Hoffman discloses wherein the means for determining a desired operating speed comprises calculating the cost of manufacturing, the manufacturing inflow, and the manufacturing outflow (outflow minus inflow equals production) at a plurality of potential operating speeds (curve) and selecting the desired operating speed from the potential operating speeds (Fig. 3, best machine efficiency, determinant of energy costs vs. production, line points to optimal point).

Claim 23 requires determining a desired operating speed by calculating the cost of manufacturing, the manufacturing inflow, and the manufacturing outflow at a plurality of potential operating speeds and selected the desired operating speeds. Fig. 3 only shows energy versus average production at different efficiencies. Fig. 3 does not show the calculations regarding cost of manufacturing, manufacturing inflow and manufacturing outflow. Further, it does not show these calculations at a plurality of potential operating speeds. And further, it does not show selecting a desired operating speed from the potential operating speeds. For these reasons and the reasons stated above for Claim 21, Claim 23 is not anticipated or obvious.

As per Claim 58, Hoffman discloses wherein said at least one economic factor is determined in real time (Fig. 3, data points equate to operational "real time" numbers).

Claim 58 requires that the economic variable be determined in real time. There is no logical way that the graph in Fig. 3 can show real time numbers. The graph in Fig. 3 was plotted after taking the numbers with regards to the steam showers and

energy. Once these numbers were graphed, these numbers would change. Therefore, the numbers are not taken in real time. For this reason and the reasons stated above for Claim 1, Claim 58 is not anticipated or obvious.

The Examiner has not given any reasons why Claim 34 is not allowable. Therefore, applicant believes that Claim 34 should have been allowed.

The Examiner has not shown any reasons why Claims 62-71 are not allowable. Therefore, applicant believes these claims should have been allowed.

Applicant has added new Claims 80-86. Claim 80 requires that the operating speed is based on current marginal cost since the prior art article does not discuss the operating speed being based on anything including marginal cost, Claim 80 should be allowable.

Claim 81 requires that the operating speed is based on current manufacturing inflows since the prior art article does not discuss the operating speed being based on anything including manufacturing inflows, Claim 81 should be allowable.

Claim 82 relates to the operating speed being based on finishing, inventorying and selling. None of these factors are described in the prior art article. Therefore, Claim 82 is allowable over the prior art.

Claim 83 relates to the purchase of raw materials and sales of finished goods. Since the prior art article does not describe these factors, Claim 83 is allowable over the prior art.

Claim 84 requires that the operating speed be based on price components. Since the prior art article does not teach this factor, Claim 84 is allowable over the prior art.

Claim 85 requires the control of the machine drive is by electronical connection to the equipment. The prior art article does not describe any control of any machine drive whatsoever. Therefore, Claim 85 is allowable over the prior art.

Claim 86 requires that the operating speed be defined as output measured in tons per day or feet per second. This is not how it is defined in the prior art article. Therefore, Claim 86 is allowable over the prior art.

During applicant's interview with the Examiner, the Examiner suggested that applicant produce evidence of non-obviousness. Enclosed are documents authored by Georgia Pacific ("GP"), one of the largest companies in the world. Enclosed is a September 23, 2000 article where Steve Macadam, the then executive vice president of Georgia Pacific stating how he "found" a low cost way of running its mills at a sweet spot that is less than full production. Obviously if Mr. Macadam found this and according to this did years of trials, to get this to work, this is not an obvious way of doing things especially based on the 1980 article of Mr. Hoffman which was in the public domain and known to all in the paper industry. In this article, Mr. Macadam further shows what the traditional or prior art view of running his paper machines was, versus the new marginal view shown in Mr. Hoffman's patent application. Also enclosed is a copy of a September 2000 article by Steve Macadam called the "Changing Market Discipline for Containerboard". In this article again, Mr. Macadam has stated that GP has "found" a new way of running their machines. Mr. Macadam shows a time line showing that prior to 1998, which is prior to Mr. Hoffman's patent application, GP ran to demand using downtime. From July of 1998 to December of 1999, GP used

slowback and needed testing at two facilities to show its value. Then from 2000 to date, GP adopted a variable operating strategy using marginal economics which is what was taught in Mr. Hoffman's patent application. Here in this article GP describes many of the marginal view economics including direct materials, energies and chemicals which GP turned to using in 2000. These same principals are taught and shown in the present patent application, and obviously were not taught in Mr. Hoffman's prior art article.

Therefore, based on the fact that one of the largest companies in the world believed that the teachings discussed in Mr. Hoffman's patent application were new and not obvious, further, that this company discussed the long felt need for such an application, shows that the claims of the present application are not obvious over the prior art.

Applicant believes that the application is in condition for allowance.

"EXPRESS MAIL" Mailing Label No. 846696023 US
Date of Deposit: May 22, 2007
I hereby certify that this paper (and any document(s) attached herewith Is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on the date indicated above and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313 on May 22, 2007

Signature: Debbie Broderick
Name: Debbie Broderick

Respectfully submitted,

Philip M. Weiss

Philip M. Weiss
Reg. No. 34,751
Attorney for Applicant
Weiss & Weiss
300 Old Country Rd., Ste. 251
Mineola, NY 11501
(516) 739-1500

CELEBRATING 75 YEARS

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THE YELLOW SHEET

3M's Box Will Be Well-Traveled

3M's "Box Around the World" will be visiting Sao Paulo, Brazil, Sydney, Australia, Tokyo, Japan, and other cities leading up to Pack Expo International. The promotion will showcase 3M's packaging integrity and global capabilities.

"The Box Around the World gives the far-reaching members of our team a face," says Jim Stake, vice president for 3M's Packaging Systems Division. "3M has operations in 62 countries and manufacturing facilities in more than 40."

Starting at its global headquarters in St. Paul, Minn., the box will be shipped to five of 3M's global subsidiaries. It will contain a digital camera, instructions, and stickers representing each country the box will "visit." At each international stop, the 3M subsidiary contact will take the box to a recognizable tourist destination or landmark and photograph it. The box will then be re-closed and sent to the next destination. The final stop for the box will be Pack Expo 2000, November 5-9 in Chicago. The box and a photo diary of the journey will be displayed at 3M's Pack Expo booth, N-3470.

Inside This Issue

Want Higher Earnings? Slow Down, Says G-P

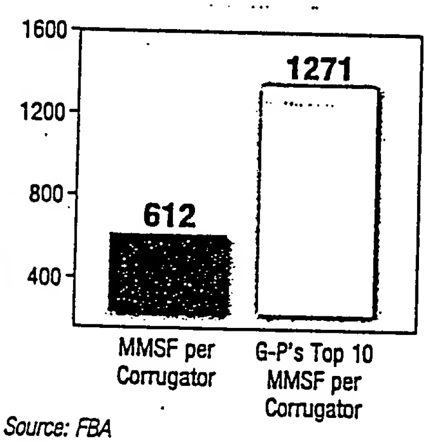
By Mark Arzoumanian
Editor in Chief

Georgia-Pacific has found a low-cost way of running its containerboard mills at a "sweet spot" that's less than full production, says Stephen Macadam, the company's senior vice president for containerboard and packaging. It's all about "slowback," he told 320 attendees at last week's 9th International Containerboard Conference, sponsored by *Pulp & Paper Week*, in Miami.

G-P's Macadam says his company won't need to add new containerboard capacity until at least 2005.

Corrugator Production

Average vs. Top 10
MMSF/corrugator
Up to 52% excess capacity in the industry based on productivity alone



Source: FBA

"Slowback" is running board machines at slower speeds versus taking downtime during times of weak demand.

Before July 1998, G-P ran its board mill machines to demand, using downtime when necessary, just like its competitors would. But that resulted in high costs connected with shutdown and startup cycles, a negative impact on employee morale, and a significant risk of equipment damage.

Starting in July 1998 (and through last December), it ran these machines to demand but used slowback rather than downtime. Trials at its mills in Cedar

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Transacted containerboard prices

Average transacted price levels are tabulated by obtaining paid prices from independent converters purchasing linerboard and medium. All prices are intended as a reference standard only. Transactions may be concluded at any time at any price agreed upon by seller and purchaser. These are delivered prices for week ended previous Tuesday. Price ranges listed are per short ton.

	Northeast	East Central	Southeast/ South Central	North Central	West
42# Fourd. Kraft Linerboard 26# upcharge: $60	445–455	460–470	455–465	460–470	480–490
26# .009 Semichemical Medium	410–420	420–430	430–440	420–430	440–450

Continued from page 1

Springs, Ga., and Monticello, Miss., proved cost savings were po sible. The move was enthusiastically supported by employe and savings were found in unexpected areas, Macadam states

"Slowback has been very positively received by employees an alternative to shutdown, but you have to communicate, cor municate, communicate," he states. "You also have to allow enou time for planning. Slowback needs to be pursued as an aggressi cost-cutting and risk-taking improvement opportunity."

Hashing out Problems

From left, SCA's Renders; Smurfit-Stone's Dages, and moderator Kangas.

A key driver in the containerboard industry has been and will continue to be consolidation, says Pete Dages, vice president and general manager, Smurfit-Stone Container Corp. Along with Rob Jan Renders, president, containerboard, SCA, he participated in a freewheeling conversation about industry problems with Paul Kangas of the Nightly Business Report at the 9th International Containerboard Conference in Miami last week. Dages adds that the industry's current mill system has to be optimized by taking out older operations.

Turning to competition from plastics, both Dages and Renders agree that about 1 percent market share has been lost to plastic crates but stress that the key determining factor in whether or not a box buyer decides to use plastic or corrugated containers is the *total cost* of the solution.

When Kangas brought up the industry's poor stock performance, both executives agreed that over the past 20 years the industry has rarely earned its cost of capital.

"We need to have sustainable earnings, not just for a few years," says Dages. "The market doesn't believe that current earnings will last. Investors look at historical performance, so doing it is the key, not talking about it."

Macadam says the incremental ton has no value. The mill needs to ensure that employees understand it's OK to eliminate costly redundancies like working overtime to finish repairs and running equipment that could be idled.

But he stresses that slowback is no miracle cure. It will fail if there's a lack of commitment from the top to the bottom of the organization.

"Some of the benefits of slowback can remain [after machines start running full tilt again], if the slowback view is retained and mill management makes every effort to reinforce the benefits," he adds.

WHY ADD CAPACITY?—With all this talk about slowing machines down, is it safe to assume that G-P won't soon be adding any greenfield capacity to its operations? Yes. When the impact on other G-P facilities is considered, new greenfield capacity doesn't return its cost of capital, Macadam reports. He adds that his company won't need new board capacity until at least 2005.

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OBM STOCK *index*

Key: NYS = New York ASE = American NASD = NASDAQ(s) = Stock split MON = Montreal

Exch.	Company		Ticker Symbol	Close 09/20/00	% Change This Week	% Change This Year	EPS Last 12 Months	P/E Ratio	52 Week High	52 Week Low
NYS	Boise Cascade		BCC	26.63	6.58	34.26	2.98	9	43.93	25.00
NASD	Caraustar Industries	(L)	CSAR	11.00	2.22	54.17	1.21	9	25.87	10.31
MON	Cascades Inc.	(L)	CAS	7.25	2.68	17.14	1.13	6	10.50	7.10
NYS	Chesapeake Corp.		CSK	21.88	5.41	28.28	1.76	2	35.75	20.18
NYS	Domtar Inc.		DTC	8.69	–5.44	–26.06	1.32	7	14.81	8.25
NYS	Fort James Corp.		FJ	31.19	–3.67	13.93	1.45	22	36.50	16.43
ASE	Gaylord Container	(L)	GCR	1.94	–22.50	–71.56	–0.12	—	8.68	1.94
NYS	Georgia-Pacific	(L)	GP	24.25	–9.56	–52.22	4.61	5	51.93	24.25
NYS	International Paper		IP	28.88	–8.33	–48.84	1.77	16	60.00	28.31
NYS	Longview Fibre		LFB	11.00	3.30	22.81	0.79	14	17.75	10.62
NYS	Mead Corp.	(L)	MEA	22.56	10.20	48.06	2.20	10	45.12	22.56
TOR	Paperboard Industries		PI	1.70	4.94	19.05	0.00		2.70	1.70
NYS	Packaging Corp/Amer.		PKG	11.88	6.40	1.04	0.00		13.18	9.25
NYS	Potlatch Corp.	(L)	PCH	30.75	5.75	31.09	0.89	35	45.50	30.56
NYS	Republic Group Inc.		RGC	18.00	0.00	19.01	0.23	78	18.50	7.68
NYS	Rock-Tenn Co.		RKT	10.13	–1.82	–31.36	–0.28	—	16.43	8.37
TOR	Roman Corp.		RMN	1.44	0.00	2.86	0.26	6	1.80	1.00
NYS	Sonoco Products	(L)	SON	17.00	–17.07	–25.27	1.85	9	25.56	16.56
NASD	Smurfit-Stone Cont. Corp.		SSCC	11.69	–9.22	–52.30	1.63	7	25.62	10.87
NYS	Temple-Inland	(L)	TIN	39.00	5.88	40.85	2.95	13	69.56	38.62
NYS	Westvaco		W	25.81	2.82	20.88	1.97	13	34.75	24.43
NYS	Weyerhaeuser	(L)	WY	39.69	6.75	44.73	3.89	10	74.50	39.69
NYS	Willamette Industries	(L)	WLL	27.06	7.28	41.72	3.06	9	48.68	26.87

(H) = New annual high reached in period. (L) = New annual low reached in period. *Source:* CNET Investor (investor.cnet.com) This information is based on sources believed to be reliable, and while extensive efforts are made to assure its accuracy, no guarantees can be made. *CNET Investor assumes no liability for any inaccuracies.*

Continued from page 4

He took the Boston-based paper forecasting company RISI to task, telling his audience that although it's forecasting new containerboard capacity of 4.8 million tons over the next 5 years, he believes that current capacity is adequate to meet demand growth.

"In our experience, even the most capital-efficient, well-executed greenfield capacity projects have failed to earn their cost of capital," he says. He then proceeded to detail how his own company's Big Island, Va., recycled linerboard machine, which successfully started up in April 1996, might not make a return on the company's $126 million investment for another 10 years or more.OBM

Skills needed to successfully manage a mill change

	Traditional View	Marginal View
Measures	• Average cost for direct materials, energy, chemicals, etc. • Fixed and variable cost/ton • Sales opportunities compared to average cost • Maximizing throughput	• Incremental cost for direct materials, energy, chemicals, etc. • Fixed and variable cost on a total $ basis • Sales opportunities compared to incremental cost • Running to mill optimum cost level
Focus	• Investing capital to "debottleneck" mill • Building inventory if necessary • Pursuing orders to "keep machines full"	• Capital focused on direct and total $ cost reduction • Running to market demand

Stephen Macadam

The Changing Market Discipline for Containerboard

Copy
Steve Macadam
"PPB" present.
9-14, 15, 2000

September 14-15, 2000
Sheraton Bal Harbour, Florida

The Changing Market Discipline for Containerboard

Stephen E. Macadam
Executive Vice President
Georgia-Pacific Corporation
133 Peachtree Street, N.E.
Atlanta, GA 30303

Introduction

Today, I would like to share three important planning tools we use at G-P in the Containerboard and Packaging Division

- How we analyze the need for new capacity
- How we analyze the economics of new Greenfield capacity
- How running mills in a “Slowback Mode” leads to higher earnings

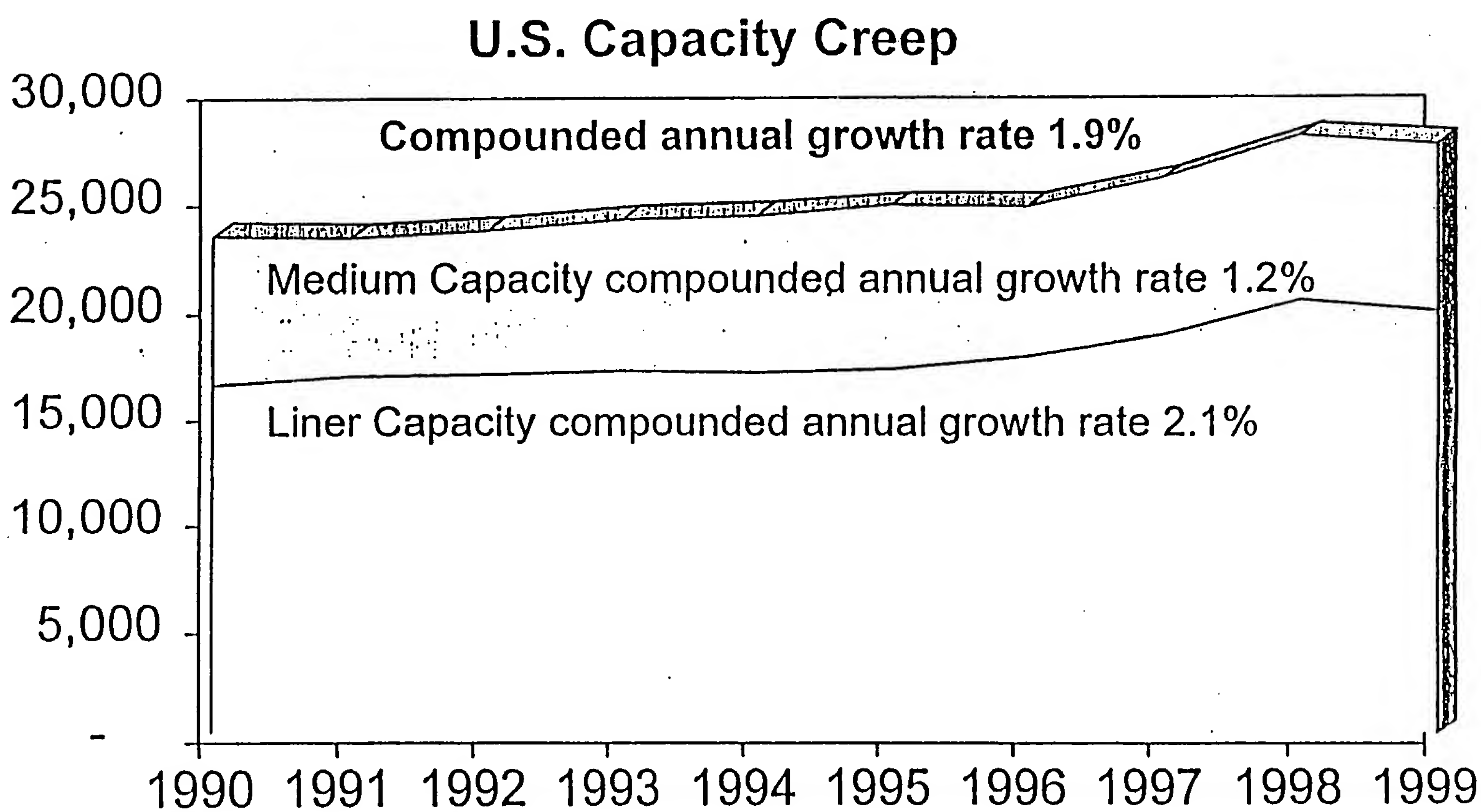
Assertion #1

- Actual historical industry capacity creep and the future consensus economic forecast for industrial production growth and reasonable export recovery expectations lead G-P to conclude that it will not need new containerboard capacity until <u>at least</u> 2005.

Facts on the North American market

- Capacity creep
- Relationship between industrial production and box consumption
- Exports

Historical industry Capacity Creep has been 1.9%



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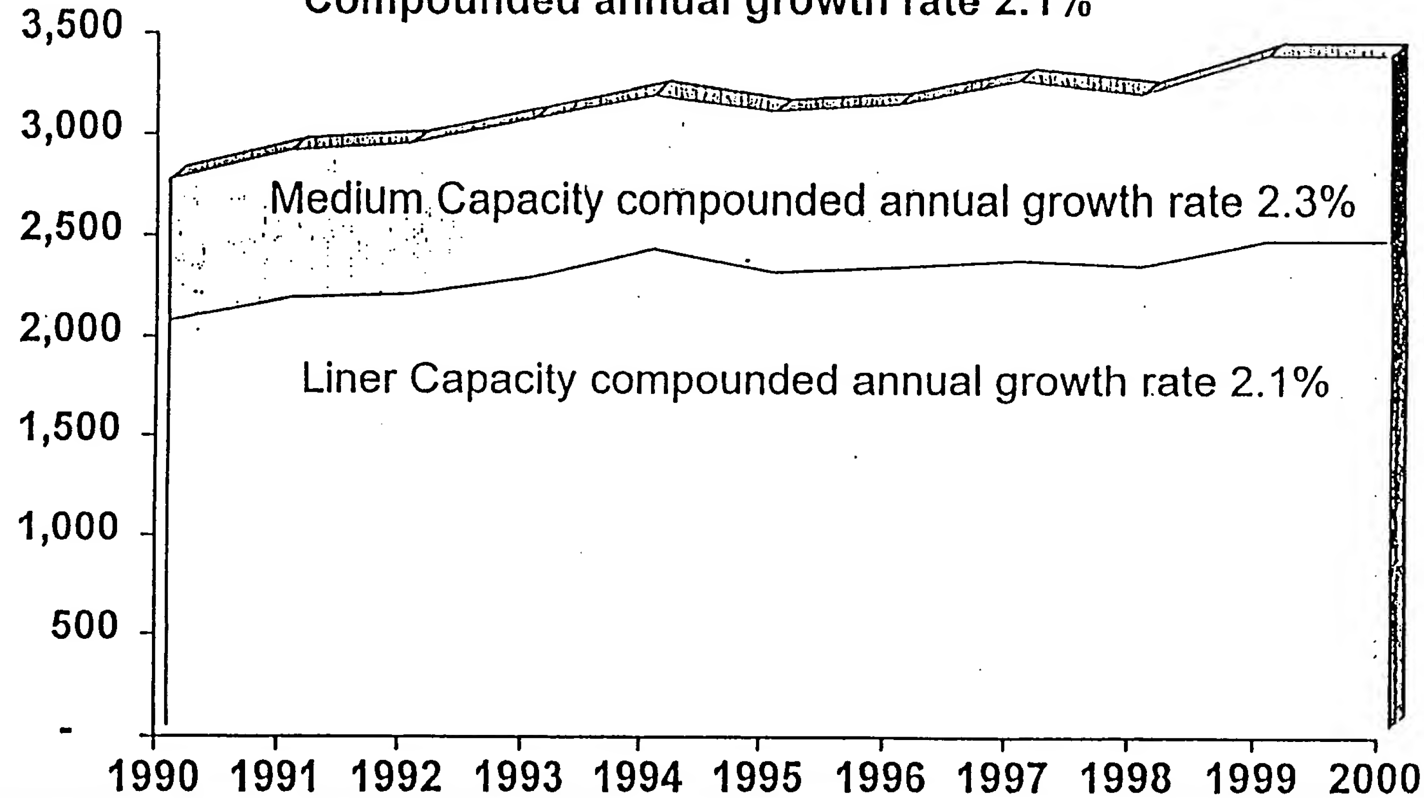
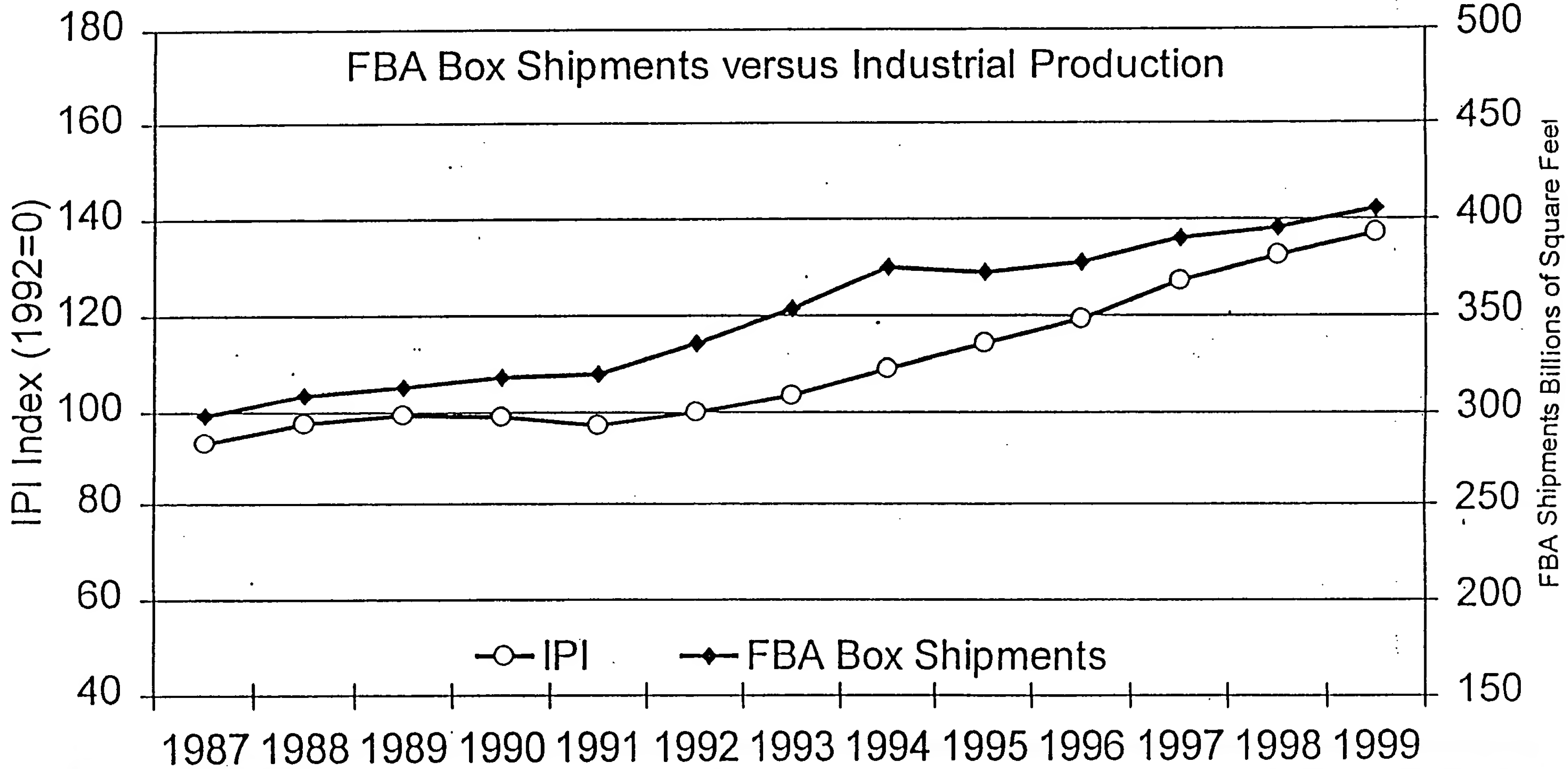
Source: Duetsche & Jackko Poyky

Georgia-Pacific's experience mirrors that of the industry

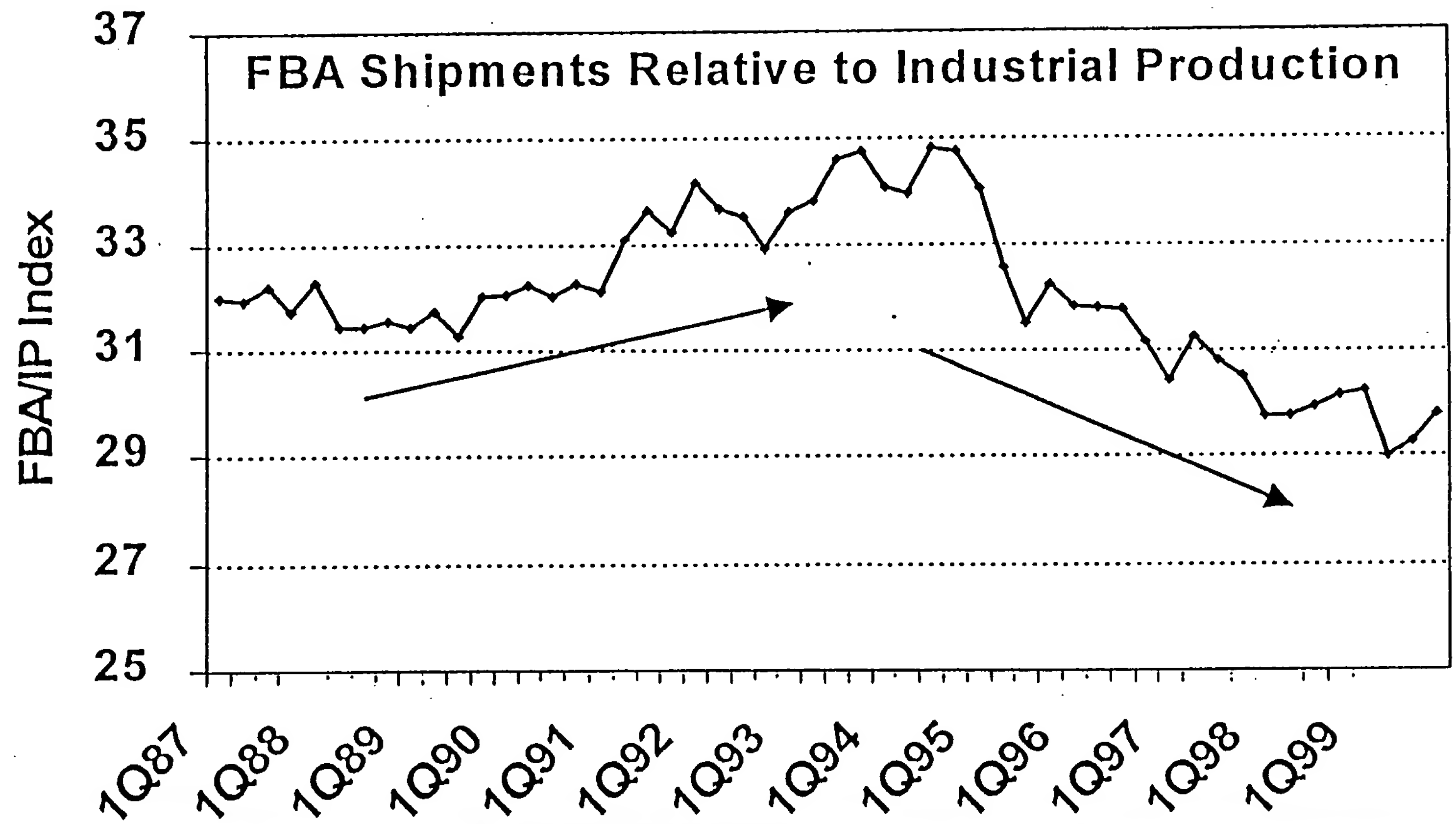
Georgia-Pacific's Capacity Creep
Compounded annual growth rate 2.1%



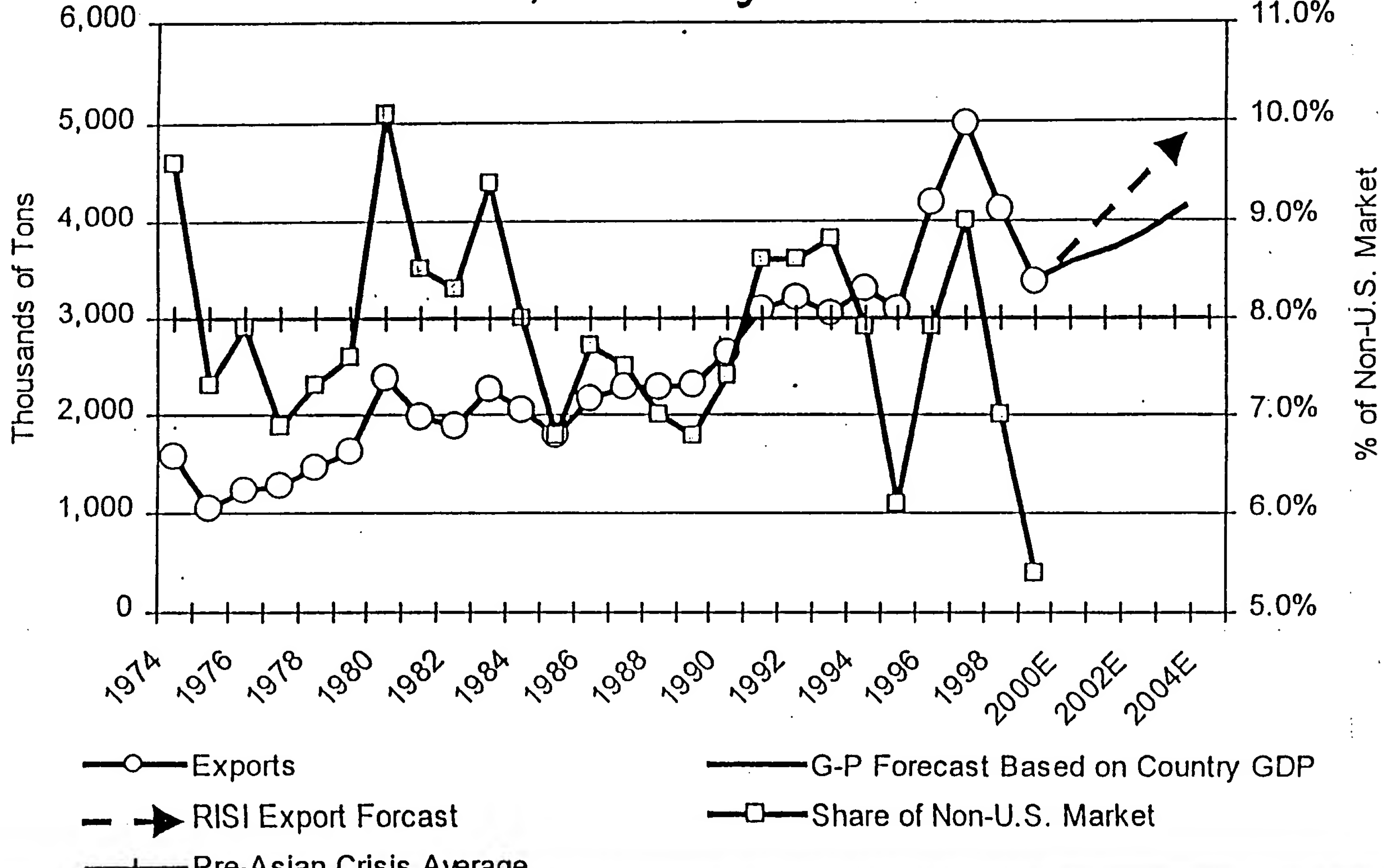
Historically, the Industrial Production Index has been used to predict Fibre Box Shipments



However, the relationship between industrial production and box consumption has made a fundamental shift



G-P projects U.S. liner export shipments will recover, but by how much?



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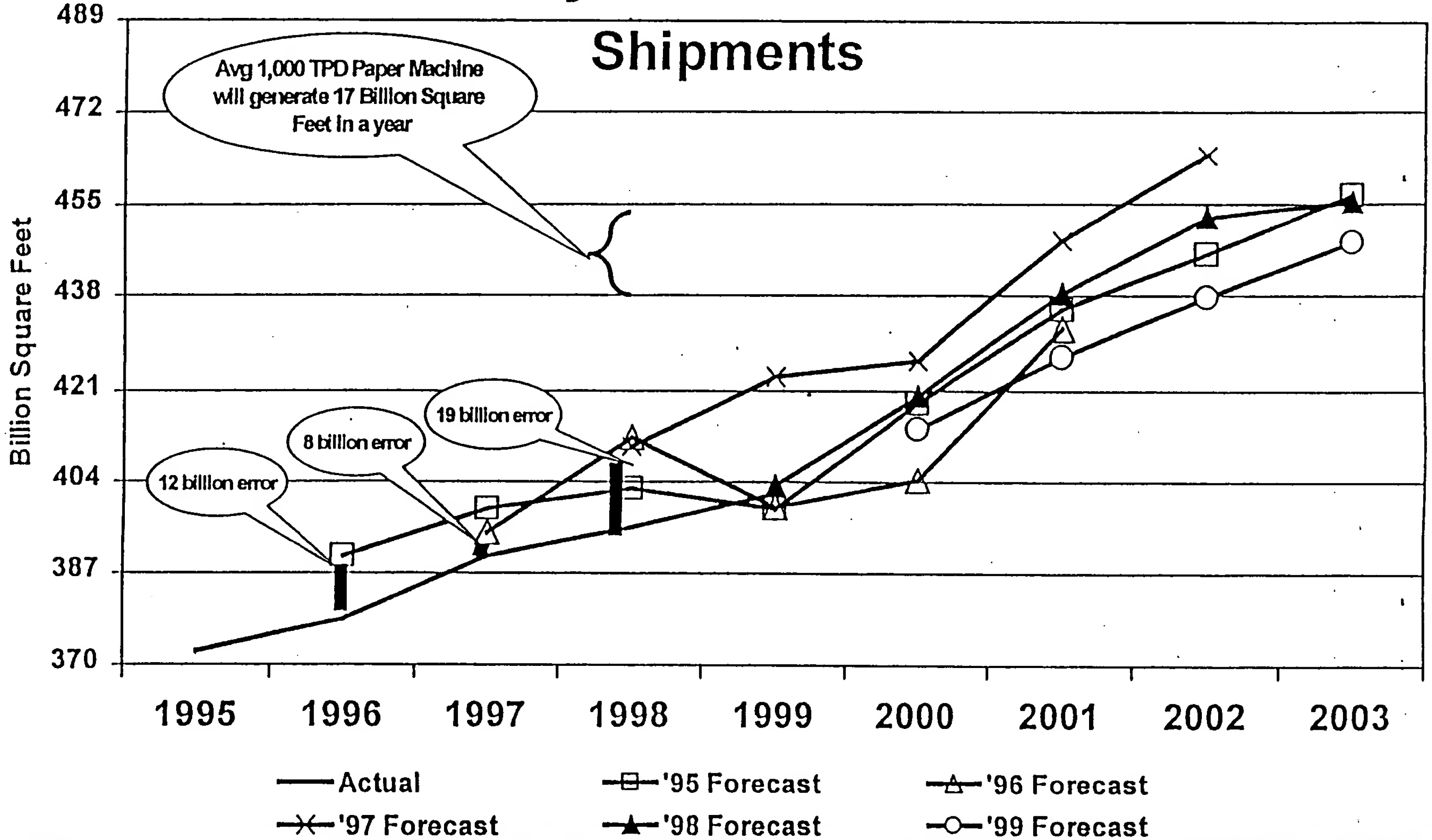
Source: AF&PA/Morgan Stanley

Assertion #2

- Outside Economic and Industry Forecasts are not infallible
- Current RISI forecast predicts new capacity of 4.8 million tons will be needed over the next 5 years
- G-P's modeling indicates current capacity is adequate to meet demand growth

Source: RISI U.S. Containerboard Outlook April 2000

Unfortunately, RISI's forecast has consistently overstated demand



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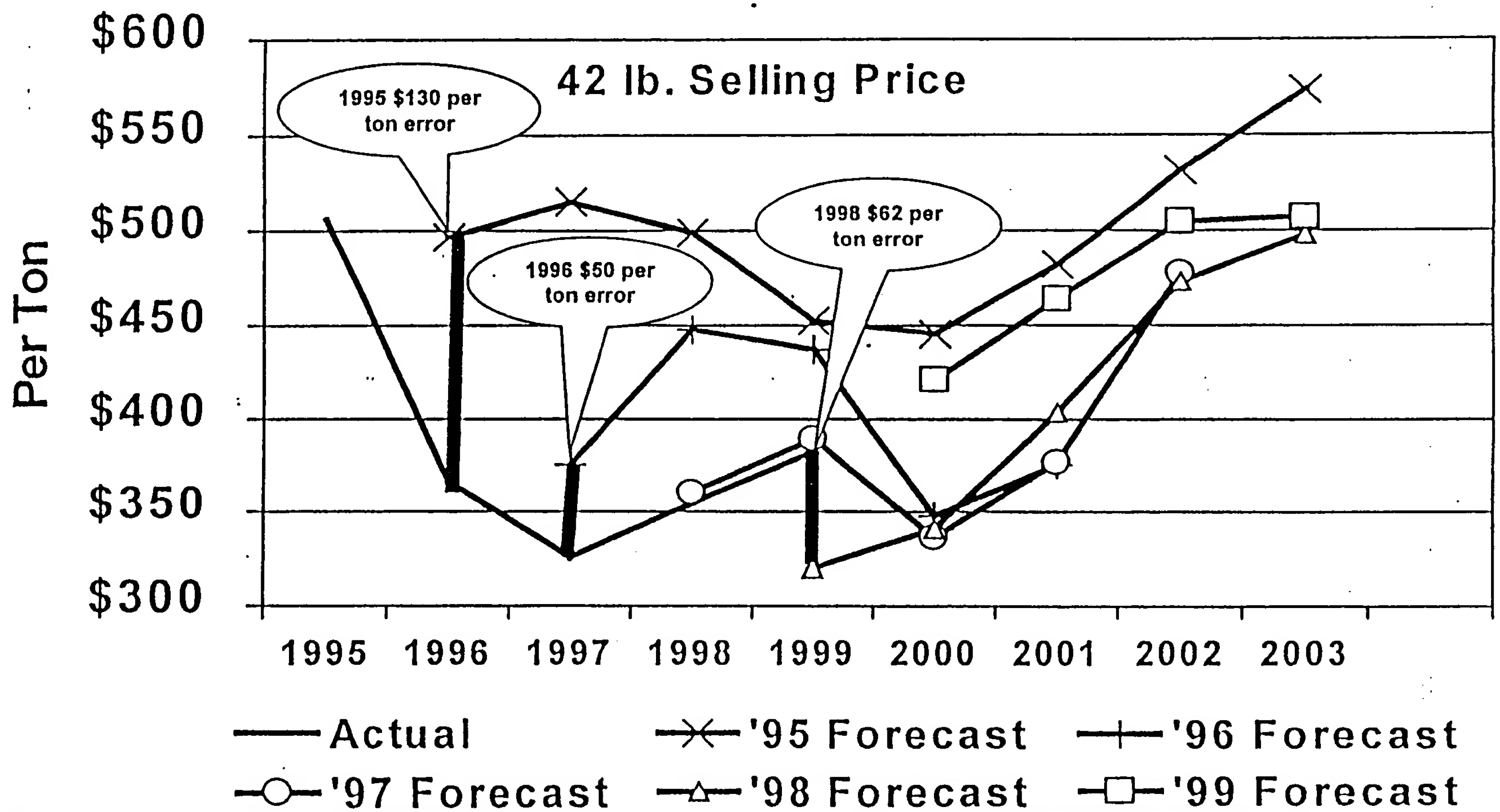
Source July 1995 Pulp & Paper Review
December 96, 97, 98, 99 North American Pulp and Paper Review

Likewise, RISI's pricing forecasts consistently miss the mark



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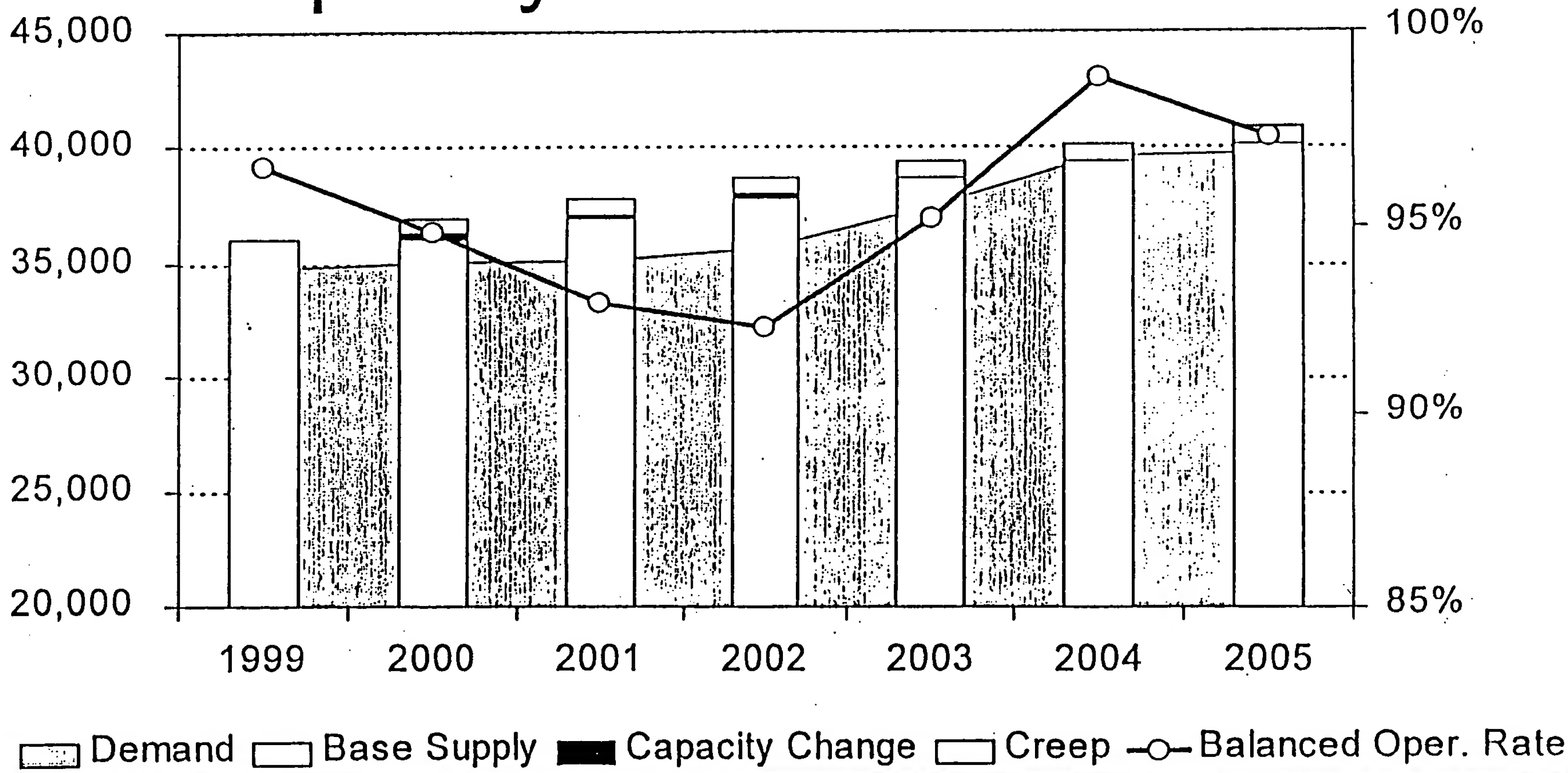
Source July 1995 Pulp & Paper Review
December 96, 97, 98, 99 North American Pulp and Paper Review

Key Input differences between RISI and G-P projections

	1999	2000	2001	2002	2003	2004	2005
Industrial Production Index							
G-P/Consensus Economist	3.6	3.2	1.7	2.1	2.9	2.8	2.9
RISI	3.6	4.7	3.4	4.1	3.1	1.4	2.9
		+ 1.5	+ 1.7	+ 2.0	.2	- 1.4	0
Export Growth%							
G-P Model	(14)	4.2	4.3	4.4	4.4	4.4	4.3
RISI	(14)	4.6	9.1	20.9	8.7	7.3	7.0
		.4	4.8	15.5			
Creep %							
G-P Model		1.80	1.80	1.80	1.80	1.80	1.80
RISI		1.25	1.25	1.25	1.25	1.25	1.25
Other Capacity Changes (000) Tons							
G-P Model (APPA to 2002)		299	135	190	0	0	0
RISI		436	397	541	873	886	1,711

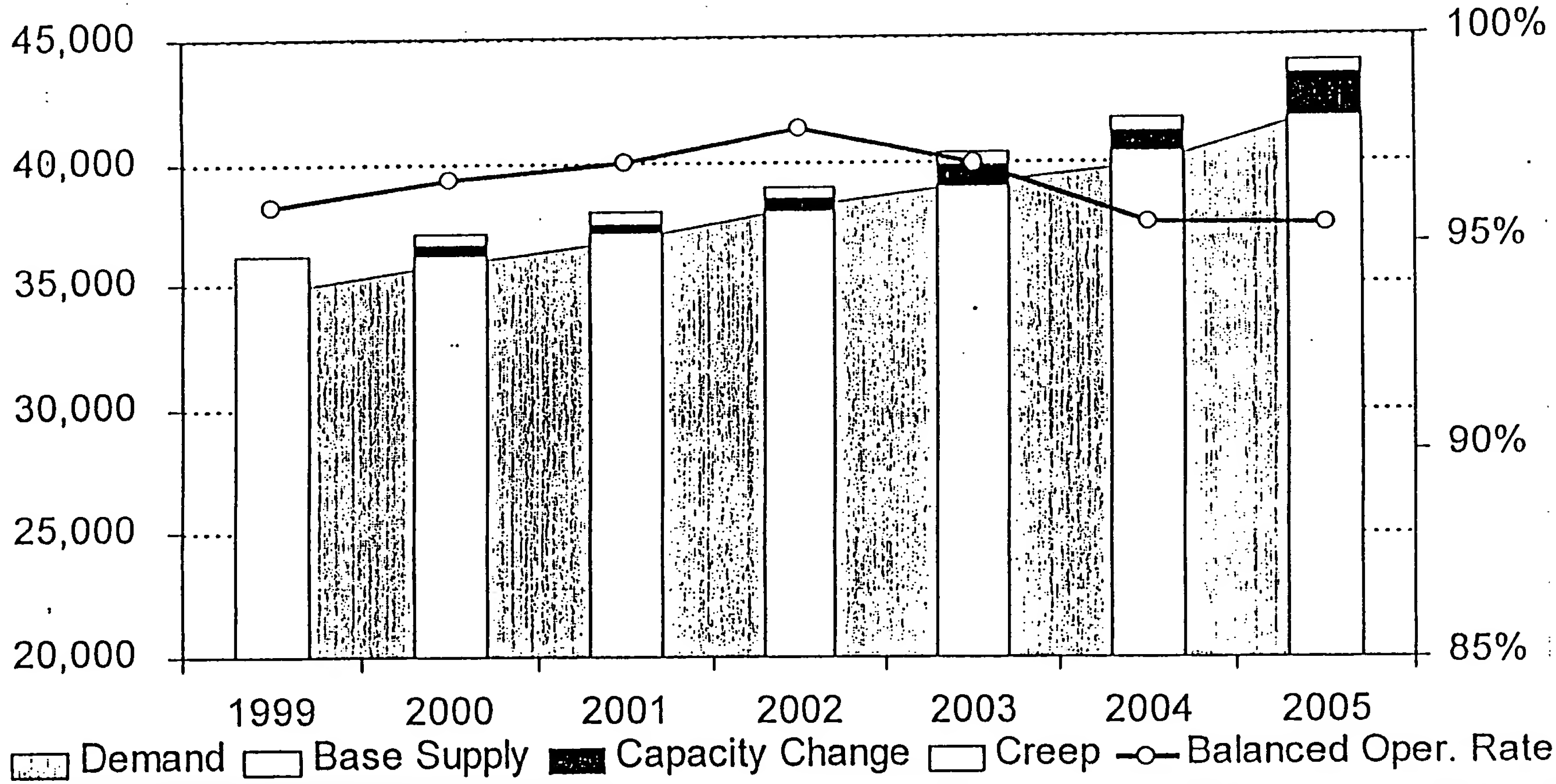
G-P Modeled North American Capacity/Demand Balance



Assertion #3

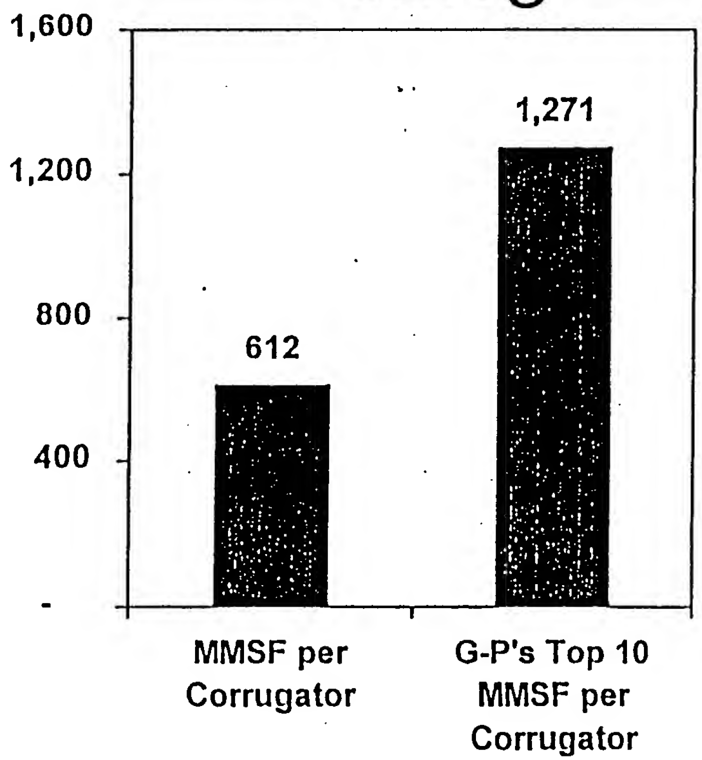
- G-P analysis of converting capacity also indicates significant over-capacity is present

RISI Forecast Capacity/Demand Balance



Corrugator Production

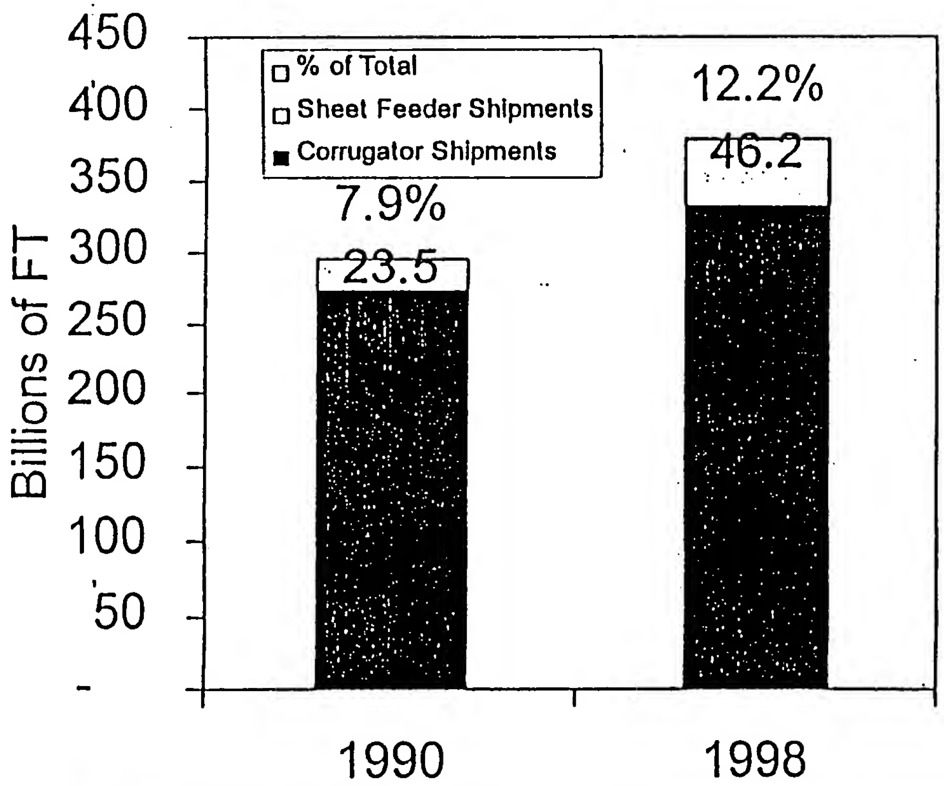
Average vs. Top Ten MMSF/corrugator



Up to 52% excess capacity in the industry based on productivity alone

Sheetfeeder Growth

Shipments Converted Containerboard
Sheet Feeders % Total Shipments



Sheet Feeder Capacity

From 1990 to 1998 the number of Sheet Feeders has grown from 24 to 77 which is a CAGR of 15.4%

Source Lockwood-Post's Directory
FBA

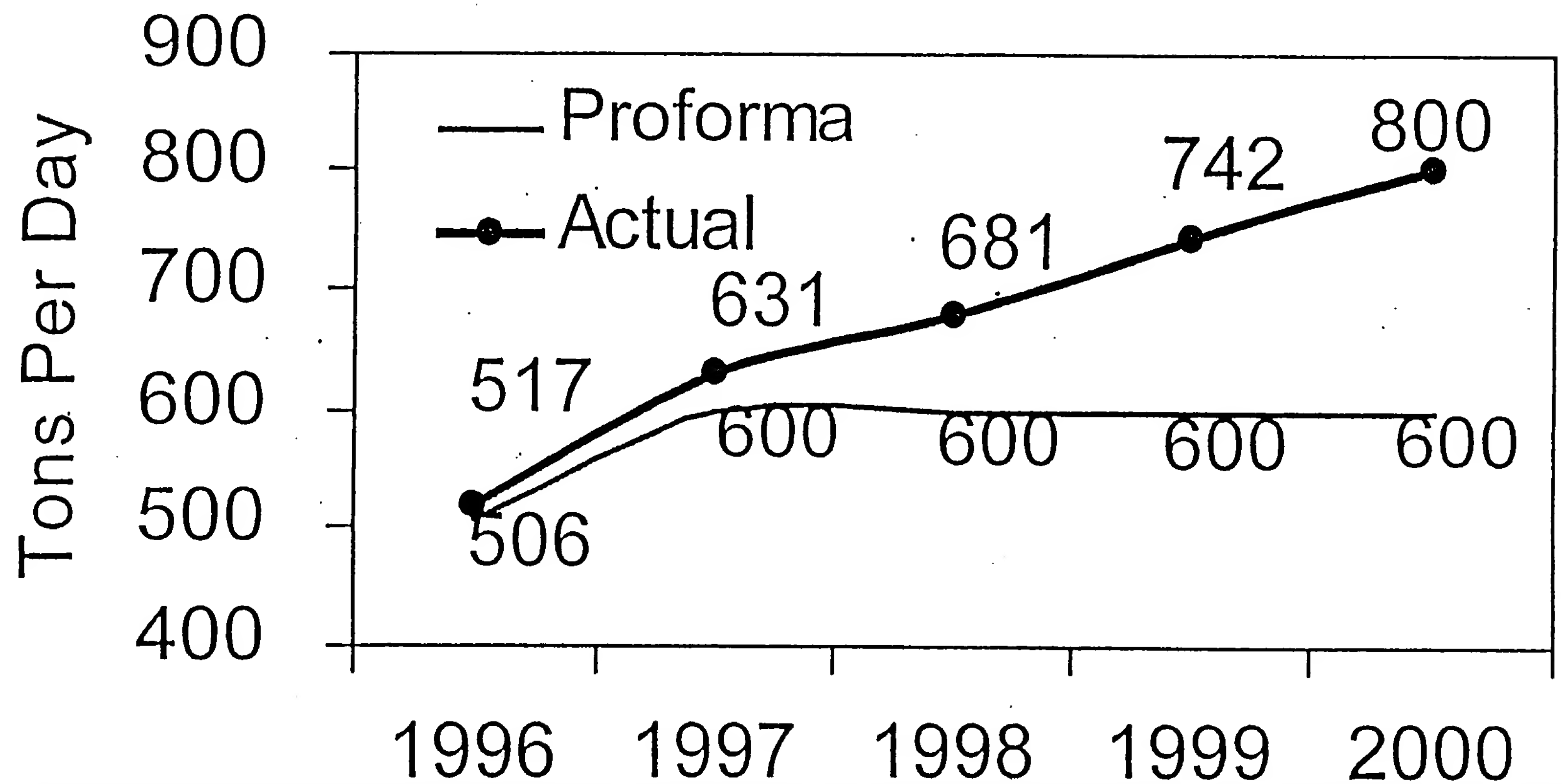
Assertion #4

- In our experience, even the most capital efficient, well executed, Greenfield capacity projects have failed to earn their cost of capital

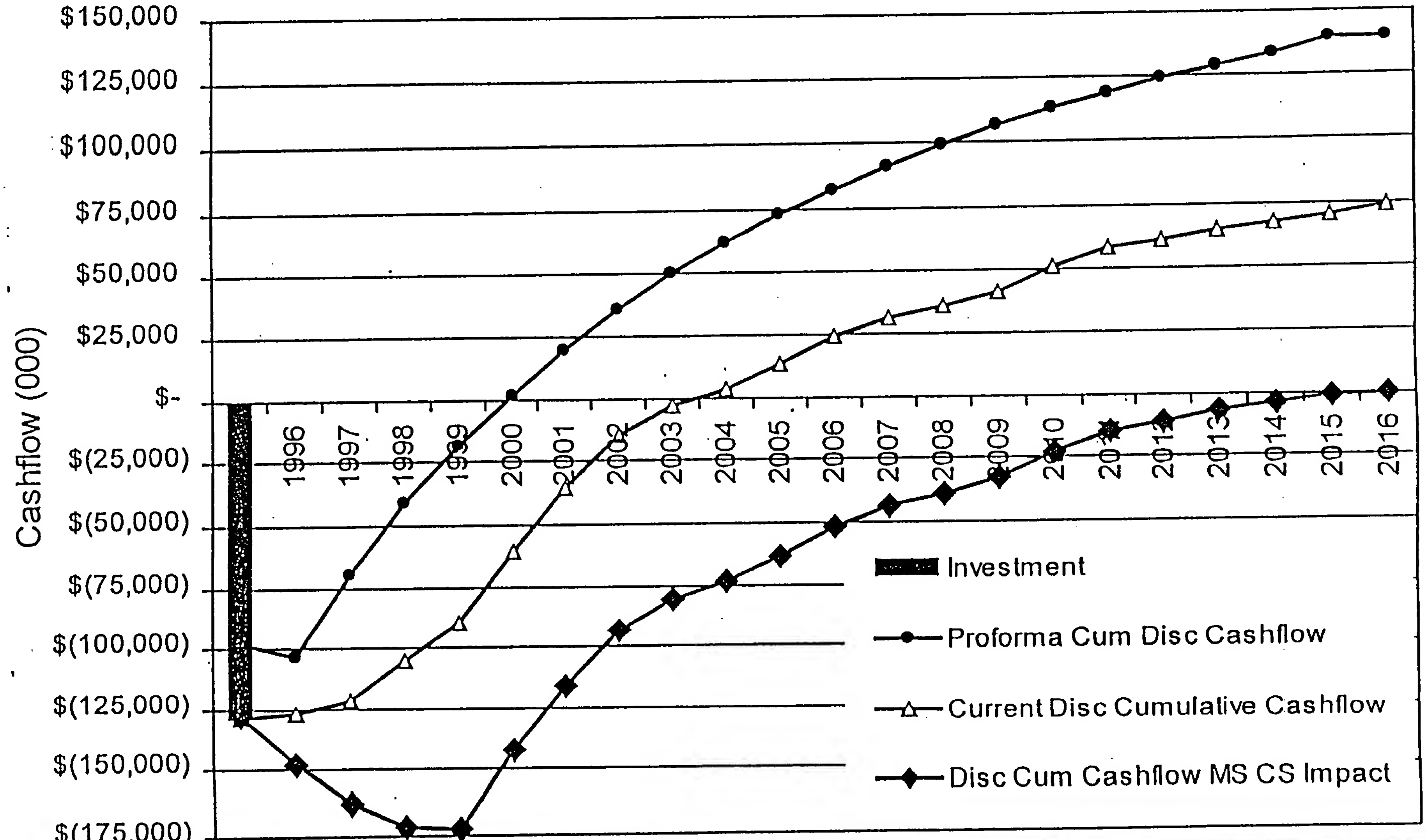
G-P's 1996 Big Island, VA New Recycled Machine

- 600 TPD 100% Recycled Liner Machine
- 900 TPD Secondary Fiber Plant
- 184" trim Valmet machine designed for 33 lb. to 42 lb. basis weight
- $ 126 million investment
- $ 210,000 cost per daily ton versus $ 157,500 @ 2000 production rates
- Construction began in 1995, followed by a successful startup in April 1996

Big Island Startup Curve



Post Audit Returns



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The New Paradigm

- G-P has found a low cost way of running our Containerboard mills at a “sweet spot” less than full production

Conclusions:

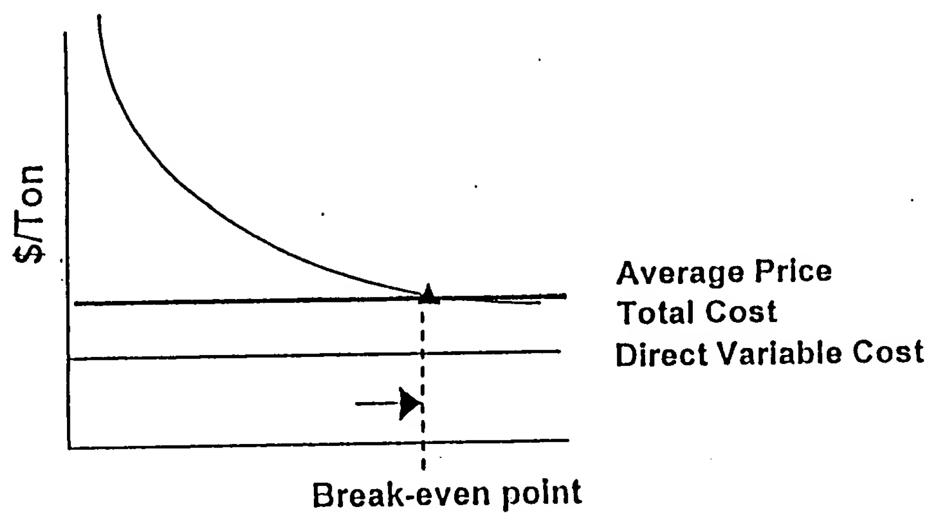
- These market dynamics and economic fundamentals are relevant in decisions whether or not to add Greenfield containerboard capacity in North America

Conceptual underpinnings - The marginal tons are the highest cost tons

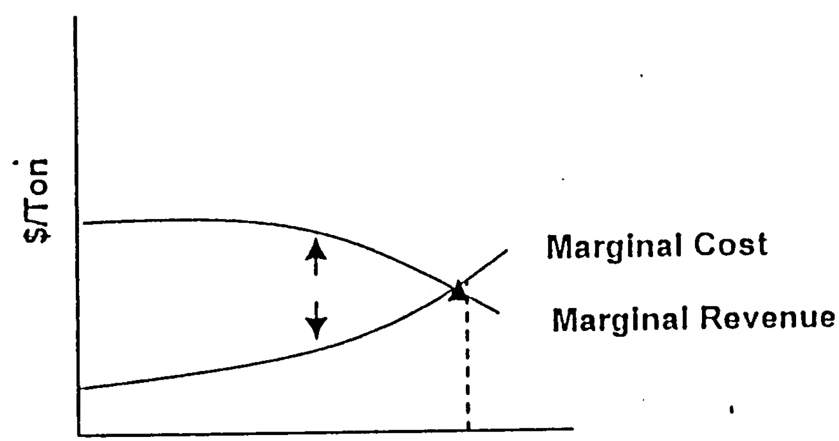
Views of Production Economics - Typical Market

ILLUSTRATIVE

"Average, Standard"



"True/Marginal"



The Evolution of G-P Containerboard's Demand Driven Strategy

Run to Demand using Downtime	Run to Demand using Slowback rather than Downtime	Fully Adopt Variable Operating Strategy
Timeframe:		
• Pre July 1998	• July 1998 - Dec 1999	• 2000 →
Observations:		
• High Costs incurred in shutdown and startup cycles • Negative Impact on employee morale • Significant risk of equipment damage	• Trials at Cedar Springs and Monticello proved cost savings • Employees supported the effort enthusiastically • Savings were found in unexpected areas	• Fully adopting marginal economics exposed cost implications of old decisions & policies • Successful rollout to remaining facilities

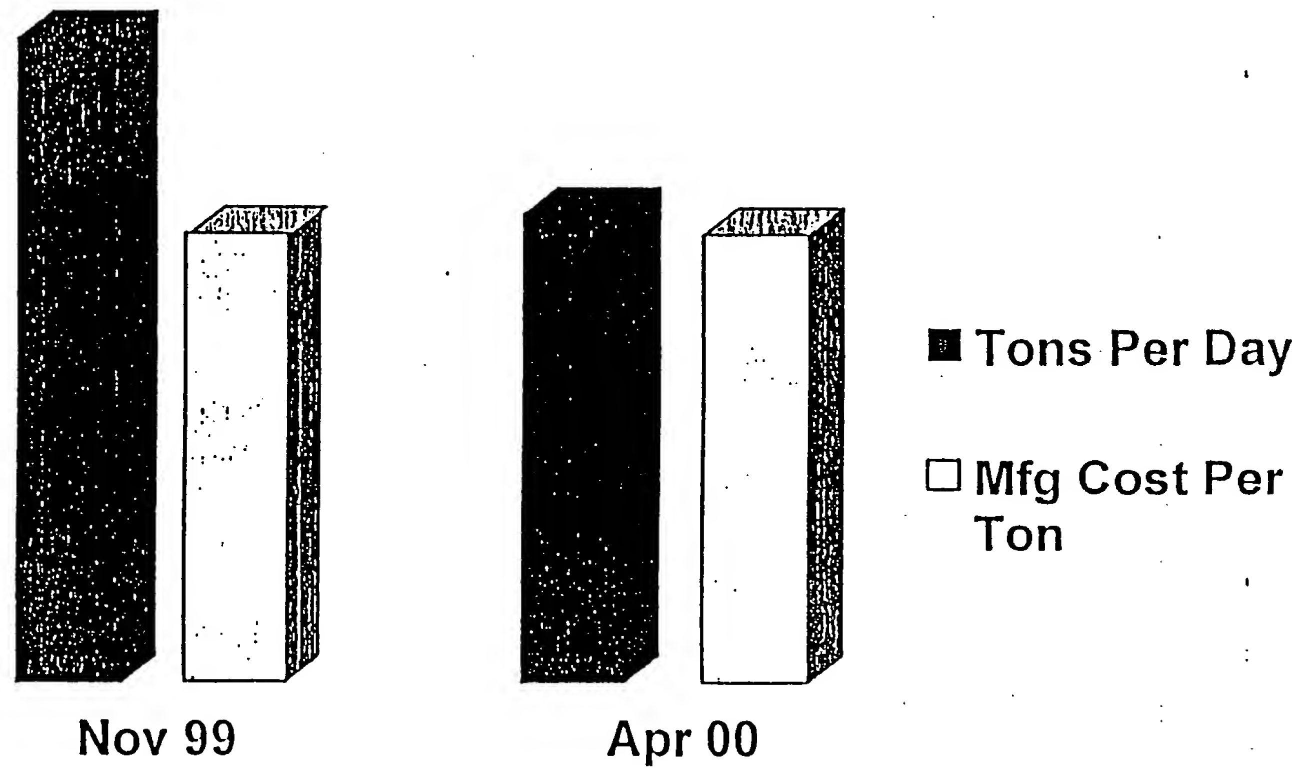
Georgia-Pacific's experience with Slowback

- Mill Manager Comments following 1998 Slowback Trials

The skills needed to successfully manage a mill change

	Traditional View	Marginal View
Measures	Average Cost for direct materials, energy, chemicals, etc.	Incremental Cost for direct materials, energy, chemicals, etc.
	Fixed and variable cost/ton	Fixed and variable cost on a total $ basis
	Sales opportunities compared to average cost	Sales opportunities compared to incremental cost
	Maximizing throughput	Running to mill optimum cost level
Focus	Investing capital to "debottleneck" mill	Capital focused on direct and total $ cost reduction
	Building inventory if necessary	Running to market demand
	Pursuing orders to "keep machines full"	

Mill Example



Specific Actions

- Fiber
  - – Eliminated highest cost fiber source (Virgin, OCC, DLK)
- Energy
  - – Curtailed highest cost energy i.e. (purchased power) Focused on reduction in Steam and Electrical Demand
    - Refiners
    - Vacuum Blowers
    - Exhaust Fans
    - Stock Pumps & Agitators
    - Power Boilers
    - Water Pumps & Aerators
    - Chilled Water Units
    - Blowers
- Chemicals
  - Defoamers
  - Drainage Aids
  - Liquor swaps

Key Learnings

- Communicate, communicate, communicate - Slowback has been very positively received, as an alternative to shutdown by the employees, which enables mill management to maximize employee involvement and results.

- Allow enough time for internal communication and planning - many of the savings require notification and planning, which "Slowback tomorrow' will not enable the mill to identify and capture.

Key Learnings

- You don't know what you don't know - Slowback needs to be pursued as an aggressive cost cutting and risk taking improvement opportunity (ex. 0% overtime targets, shutting down equipment, etc...).

- The incremental ton has no value - as with the previous point, the mill needs to ensure that the employees understand it's OK to eliminate costly redundancies (ex. working OT to finish repairs, running equipment that could be idled, etc...).

Key Learnings

- Slowback will fail if you want it to - other mills have failed at running slowed back due to a lack of commitment from the top to the bottom of the organization.

- A way of life - some of the benefits of Slowback can remain after Slowback, if a Slowback view is retained and mill management makes every effort to reinforce the benefits when the mill is back to full production.

Conclusions:

- In G-P's experience:
  - When executed correctly, slowing back a Containerboard mill can significantly lower the total cost, but requires a different management mindset and new operating skills.